



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,207	12/16/2003	Randy Haagens	200313142-1	5771
22879 7590 08/14/2007 HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			EXAMINER ANWARI, MACEEH	
			ART UNIT 2144	PAPER NUMBER
			MAIL DATE 08/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/737,207	Applicant(s) HAAGENS ET AL.	
	Examiner Maceeh Anwari	Art Unit 2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/16/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to the amendments filed on 6/01/07. Claims 12-20 were amended. No other claims have been amended, canceled, or newly presented. Accordingly, claims 1-26 are pending.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10 & 12-20 & 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-10 & 12-20 & 26 are vague and indefinite because the applicant recites the limitation of a network however the claims lack a physical component.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, the "apparatus" claimed is in fact software per se and not a process, machine, or composition of matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 & 4 & 7-10 & 11-12 & 14 & 17-19 & 20-23 & 25 & 26 are rejected under 35 U.S.C. 102(b) as being taught by Recio et al (hereinafter Recio), International Publication No. WO 00/72142.

Recio teaches:

Claim 1:

An apparatus for managing flow control of a data transfer, comprising: a first protocol associated with a plurality of receive buffers (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); a second protocol adapted to manage the plurality of receive buffers for the first protocol (Figure 1-5 and Page 5 lines 5-12; processors); and a third protocol that determines whether one of the plurality of receive buffers is available for a data packet and (a) if one of the plurality of receive buffers is available, permits an acknowledgement packet to be sent to a node that sent the data packet, and (b) if one of the plurality of receive buffers is unavailable, drops the data packet, notifies the second protocol regarding the unavailability of the plurality of receive buffers, and withholds the acknowledgement packet (Figures 1-5 Page 12 line 25- Page 13

line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

Claim 2:

Wherein the first protocol is an upper layer protocol ("ULP") (Figure 11 & Page 26 lines 7-9 & 23-24; upper layer protocols and applications).

Claims 4:

Wherein the second protocol is a datamover protocol (Figures 1-5 & 9B & 11 and Page 7 lines 26-30 & Page 9 lines 29 – Page 10 lines 2 & 26-31; multiple send and receive buffers, messages and components).

Claim 7:

Comprising a transport protocol that generates a request to the third protocol to determine whether one of the plurality of receive buffers is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability).

Claim 8:

Wherein the data packet comprises a sequence field that corresponds to a reliability tracking value for the data packet (Figure 9B and Page 5 lines 13-19 and Page 14 lines 3-11; frame components).

Claim 9:

Wherein the acknowledgement packet comprises an acknowledgement field that corresponds to an identity of data received by the transport protocol

(Figures 1 & 9B and Page 5 lines 13-19 & Page 8 lines 4-19 & Page 14 lines 3-11; data frames and headers).

Claim 10:

Comprising a transport protocol that uses a remote direct memory access network interface card ("RNIC") to receive the data packet and send the acknowledgement packet (Page 10 lines 3-19; it is inherent that, since RDMA is utilized throughout the Recio invention, an RNIC would be used as an interface card).

Claim 11:

A network, comprising: a plurality of systems, at least one of the plurality of systems executing a process; and at least one input/output device adapted to receive a data packet from the at least one of the plurality of systems (Figures 1-5 and Page 4 lines 21-28; multiple systems/processors, WANs and LANs), the at least one input/output device comprising: a first protocol associated with a plurality of receive buffers (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); a second protocol adapted to manage the plurality of receive buffers for the first protocol (Figure 1-5 and Page 5 lines 5-12; processors); and a third protocol that determines whether one of the plurality of receive buffers is available for a data packet and (a) if one of the plurality of receive buffers is available, permits an acknowledgement packet to be sent to a node that sent the data packet, and (b) if one of the plurality of receive buffers is unavailable, drops the data packet, notifies the second protocol regarding the

unavailability of the plurality of receive buffers, and withholds the acknowledgement packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

Claim 12:

Wherein the first protocol is an upper layer protocol ("ULP") (Figure 11 & Page 26 lines 7-9 & 23-24 upper layer protocols and applications).

Claim 14:

Wherein the second protocol is a datamover protocol (Figures 1-5 & 9B & 11 and Page 7 lines 26-30 & Page 9 lines 29 – Page 10 lines 2 & 26-31; multiple send and receive buffers, messages and components).

Claim 17:

Comprising a transport protocol that generates a request to the third protocol to determine whether one of the plurality of receive buffers is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; an end-node's availability).

Claim 18:

Wherein the data packet comprises a sequence field that corresponds to a reliability tracking value for the data packet (Figure 9B and Page 5 lines 13-19 and Page 14 lines 3-11; frame components).

Claim 19:

Wherein the acknowledgement packet comprises an acknowledgement field that corresponds to an identity of data received by the transport protocol (Figures 1 & 9B and Page 5 lines 13-19 & Page 8 lines 4-19 & Page 14 lines 3-11; data frames and headers).

Claim 20:

Comprising a transport protocol that uses a remote direct memory access network interface card ("RNIC") to receive the data packet and send the acknowledgement packet (Page 10 lines 3-19; it is inherent that, since RDMA is utilized throughout the Recio invention, an RNIC would be used as an interface card).

Claim 21:

A method of managing flow control of a data transfer, the method comprising the acts of: receiving a data packet; determining whether at least one receive buffer is available for the data packet (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability); if the at least one buffer is available, sending an acknowledgement packet to a node that sent the data packet (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs); and if the at least one buffer is unavailable, dropping the data packet, providing a notification regarding the unavailability of the at least one buffer, and withholding an acknowledgement packet from the node that sent the data packet (Figures 1-5

Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31;
reliability, acknowledgment, successive retries and time-outs).

Claim 22:

The method set forth in claim 21, comprising the act of placing the data packet into the at least one buffer if the at least one buffer is available (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

Claim 23:

The method set forth in claim 21, comprising the act of transmitting the data packet according to a transmission control protocol ("TCP") (Figures 1-5 & 9B & 11 and Page 15 lines 1-18; compatibility with TCP and other standard communication protocols).

Claim 25:

The method set forth in claim 21, comprising the act of notifying a process associated with the at least one buffer once the at least one buffer is determined to be unavailable (Figures 2-5 & 9B & 11 and Page 38 lines 17-26; end-node's availability).

Claim 26:

An apparatus for managing flow control of a data transfer, comprising:
means for receiving a data packet at a first protocol (Page 9 lines 29 –31 & Page 10 lines 1-2 & 26-31 & Page 11 lines 1-2; reads off of the limitation of a single or multiple receive buffers); means for determining whether at least one receive

Art Unit: 2144

buffer is available for the data packet (Figures 1-5 and Page 8 lines 4-11; multiple storage and memory components); means for sending an acknowledgement packet to a node that send the data packet if the at least one buffer is available (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs); and means for dropping the data packet, notifying a second protocol regarding the unavailability of the at least one buffer, and preventing an acknowledgement packet from being sent if the at least one buffer is unavailable (Figures 1-5 Page 12 line 25- Page 13 line 5 & Page 14 lines 3-7 & Page 23 lines 29-31; reliability, acknowledgment, successive retries and time-outs).

Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2144

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 3 and 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Recio et al (WO 00/72142 A1) in view of "Overview of Modern SCSI Networking Protocols."

Recio teaches the invention as discussed above and further teaches SCSI and the availability of an end node.

Recio fails to teach the apparatus set forth in claims 3 and 13, wherein the Upper layer protocol being iSCSI.

"Overview of Modern SCSI Networking Protocols," teaches that iSCSI is designed to work with existing SCSI architecture and are compatible with each other for the purpose of facilitating communication over TCP/IP networks.

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Recio with iSCSI replacing SCSI because iSCSI is designed to work with existing SCSI architecture and are compatible with each other for the purpose of facilitating communication over TCP/IP networks.

10. Claims 5 and 15 and 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Recio et al (WO 00/72142 A1) in view of Modi et al., U.S. Publication NO.: 2004/0190533 A1.

Recio teaches the invention as discussed above and further teaches RDMA and a datamover protocol.

Recio fails to teach the apparatus set forth in claims 5 and 15, wherein the third protocol is an iWARP protocol and fails to teach the iWARP protocol is a direct data placement (DDP) protocol.

Modi et al., U.S. Publication NO.: 2004/0190533 A1, teaches that iWARP is simply a reference to the suite of protocols comprising the RDMA protocol and teaches that the DDP protocol may translate messages from the RDMA protocol for the purpose of transmission across a network, such as a switch network (Par. 22 Lines 1-3).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Recio with iWARP being one of the protocols and the datamover protocol being a direct data placement protocol; for the purpose of facilitating communication over TCP/IP networks.

Response to Arguments

11. Applicant's arguments filed have been fully considered but they are not persuasive. In substance, the applicant argues A) claims 1-20 and 26, as currently amended, fall under a statutory category; B) claims 1-10, 12-20 and 26, as currently amended, are definite and compliant with Section 112, second paragraph; c) the incorrectness of the provisional non-statutory obviousness type-double patenting

rejection of claims 1-2, 4, 7-10, 11-14, 17-20 and 21-26 over claims 1-23 of copending Application No. 10/666, 174, and provision non-statutory obviousness-type double patenting rejection of claims 5, 6, 15, 16 over claims 6-7, 11, 12, 18, 20 of copending Application No. 10/666,174 in view of U.S. Patent Publication No. 2004/0190533; D) that under Section 102 of independent claims 1, 11, 21 and 26 is improper because the Recio reference does not disclose a second protocol adapted to manage the plurality of receive buffers for the first protocol; E) that the combination of the Recio reference with either the SCSI reference or the Modi reference do not render the Applicant's claims obvious.

12. In response to A), although the examiner has read the applicant's argument, the claims still fail to explicitly meet the conditions set forth by 35 U.S.C 101. Software must be executed on some device or structurally tied to some computer readable medium to realize its function, the claims fail to explicitly meet either of these conditions. Nowhere in the claims 1-20 and 26 are the components structurally tied to a tangible computer readable media. Therefore, failing to meet the requirements set forth by 35 U.S.C 101.

13. In response to B), examiner respectfully disagrees. The claims 1-10 & 12-20 & 26 are still vague and indefinite because the applicant recites the limitations of a network however the claims, still lack the necessary physical components.

14. In response to C), examiner respectfully withdraws the rejections under Doctrine of Obviousness-Type Double Patenting.

15. In response to D), examiner respectfully disagrees. Recio does in fact teach all the limitations recited within claims 1, 11, 21 and 26. Applicant is advised to reevaluate

the rejection stated above and to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

In response to E), the examiner respectfully disagrees. In fact the combination of the Recio reference with either the SCSI reference or the Modi reference do in fact render the Applicant's respective claims as obvious. Applicant is advised to reevaluate the above-mentioned rejection.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

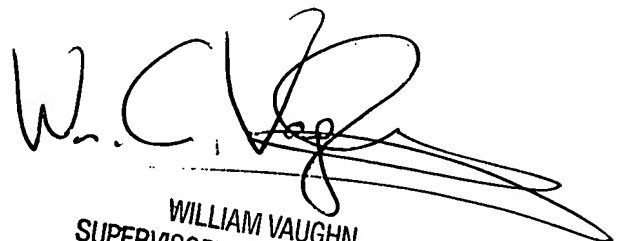
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maceeh Anwari whose telephone number is 571-272-7591. The examiner can normally be reached on Monday-Friday 7:30-5:00 PM ES.

Art Unit: 2144

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.A.


WILLIAM VAUGHN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100